

Claims

1. (Currently Amended) Machine for rough-planing and planing functional elements of crankshafts or camshafts by turning and/or milling, fitted with two spindle heads which are arranged in the alignment of the axis of rotation of the crankshaft or camshaft being machined and which can be driven at different rotational speeds, each provided with a milling tool and with a back center integrated into each of the chucks, ~~characterized in that~~
wherein
 - the spindle heads ~~(3 and 4)~~ can be driven directly and are at a respective distance from each other in direction Z
 - two carriages ~~(12, 20)~~ capable of traveling in directions X and Z are each equipped with a rotationally driven milling tool ~~(13)~~ as well as
 - two carriages ~~(15, 21)~~ capable of traveling in directions X and Z are each provided with at least one turning tool ~~(17)~~, whereby the milling and turning tools are located diametrically across from each other relative to the common axis of rotation of the spindle heads.
2. (Currently Amended) Machine as in claim 1,
~~characterized in that~~
wherein
a plurality of turning tools ~~(17)~~ are installed on a revolving disk ~~(16)~~.

3. (Currently Amended) Machine as in claim 1,
~~characterized in that~~
wherein
at least one back center ~~(10, 11)~~ is fixed or movable in direction Z.
4. (Currently Amended) Machine as in claim 1,
~~characterized in that~~
wherein
both spindle heads ~~(3, 4)~~ can be driven directly within a range of rotational speeds between 5 min^{-1} and 1500 min^{-1} .
5. (Currently Amended) Machine as in claim 1,
~~characterized in that~~
wherein
at least one of the two chucks ~~(6, 7)~~ is designed so as to be equalizing.